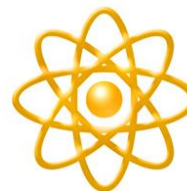




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# **Managing Environmental Issues**

**Andy Lawrence**  
December 4, 2008

# Environmental Management Systems Overview



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## Environmental Management Systems provide the Framework:

- For managing the Environmental Aspects of DOE Activities
- For implementing 'Sustainable Practices' required by DOE Orders
- For achieving Departmental Goals established in DOE Orders
  - Sustainable Environmental Stewardship
  - Green Buildings
  - Energy and Water Conservation
  - Fleet Management
- For managing Regulatory Compliance

# Environmental Management Systems



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- An Environmental Management System (EMS) is a systematic and structured approach for addressing environmental consequences of an organization's activities, products and services.
- DOE has implemented 43 EMSs complex-wide.
- EMS required to be integrated into the site's Integrated Safety Management System
- EMS is required at DOE sites by DOE Order 450.1A, (implementing requirements of Executive Order 13423 and the prior EO 13148).

# Why Have an Environmental Management System?



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- EMS/ISMS provides an environmental protection program that ensures early detection of and systematic management of environmental problems.
- EMS/ISMS allows managers to integrate environmental considerations into everyday business processes and mission activities.
- Effective EMS/ISMS implementation can create an organizational culture of superior environmental performance through increased environmental awareness and life cycle accountability for everyone working at DOE sites.

# New EMS Requirements



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- DOE revised DOE O 450.1A *Environmental Protection Program* to incorporate new EMS requirements (June 2008)
- New requirements for EMS elements:
  - Reflect the elements and framework of the ISO 14001 standard
  - Self-declaration and audit requirements
- Expanded EMS scope:
  - Energy efficiency
  - Fleet management
- Requirements derive from
  - EO 13423 *Strengthening Federal Environmental, Energy, and Transportation Management* (January 2007)
  - Council on Environmental Quality *Implementation Instructions* (March 2007)

# Declaration that EMS is “Fully Implemented”



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- 43 DOE sites have implemented EMSs
- Almost all met the original (450.1) deadline of December 2005
- Under the revised DOE O 450.1A, each EMS must be declared to be “fully implemented.” This requires that:
  - a) A formal audit of the EMS be conducted by a qualified party outside the scope of the EMS
  - b) The appropriate contractor senior management and DOE field office management recognize and address the findings of the audit
  - c) The appropriate senior managers declare that the EMS conforms to the EMS requirements of DOE O 450.1A
- Following this, a formal audit by a qualified party outside the scope of the EMS must be conducted at least every three years

# Ongoing Implementation of EMS



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- DOE O 450.1A requires DOE to use EMS as the management framework to implement, manage, measure, and continually improve upon, the sustainable environmental, energy, and transportation practices and goals of EO 13423
- DOE reports annually on the ongoing implementation of EMS at DOE sites
- EMS implementation (and continual improvement) is one of the elements tracked as part of the Office of Management and Budget's Environmental Stewardship Scorecard.

# DOE's Environmental, Energy, and Fleet Goals



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## DOE O 450.1A *Environmental Protection Program*

- establishes (new) EMS requirements
- establishes (new) goals and addresses specific sustainable environmental practices for achieving goals

## DOE O 430.2B *Departmental Energy, Renewable Energy and Transportation Management*

(issued February 2008)

- addresses key elements of the Department's TEAM Initiative
- establishes goals for energy and water conservation and fleet management
- states that these programs are to be implemented through the site EMS





Many Sustainable Practices are identified in  
DOE O 450.1A and DOE O 430.2B, for:

- a. Energy and water conservation, greenhouse gas emissions avoidance or reduction, and petroleum products use reduction
- b. Renewable energy, including bio-energy
- c. Water conservation
- d. Acquisition of environmentally preferable products (such as recycled content, bio-based content, and energy efficiency)
- e. Reduction or elimination of acquisition and use of toxic or hazardous chemicals; pollution and waste prevention; and recycling
- f. High performance construction, lease, operation, and maintenance of buildings
- g. Vehicle fleet management
- h. Electronic equipment acquisition, management, disposal

# Sustainable Practices Enable DOE to Meet Our Goals



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- Implementation of sustainable practices helps the Department achieve its sustainable environmental stewardship goals of DOE O 450.1A, and the goals of DOE O 430.2B
- These goals are performance-based requirements for site-specific objectives and measurable targets at each DOE site's EMS.
- Only goals and sustainable practices relevant to site operations and mission activities need be addressed in the EMS.

# DOE Energy and Water Goals – DOE O 430.2B



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- Reduce energy intensity by no less than 30 percent by FY 2015 on average
- Reduce potable water use by no less than 16 percent by FY 2015
- Install advanced electric metering systems and standard steam, natural gas, and water metering systems
- Install on-site renewable energy generation
- Attain the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Gold certification for all capital asset new construction and major building renovations
- Incorporate sustainable building requirements in at least 15% of existing DOE facilities by 2015
- Ensure all alternative fuel vehicles operate on alternative fuels to greatest extent practicable

# DOE Sustainable Environmental Stewardship Goals – DOE O 450.1A



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- DOE O 450.1A sustainable environmental stewardship goals address:
  - Pollution Prevention
  - Toxic Chemical Use and Release Reduction
  - Environmentally Preferable Purchasing
  - Electronic Stewardship
  - Post-Consumer Material Recycling
- Goals are to be achieved by sites through integration with sites' EMSs.
- DOE sustainable environmental stewardship goals emphasize mission accomplishment as well as environmental protection
  - Reduce environmental hazards, protect natural resources, and minimize future environmental legacies
  - Avoid pollution-control costs, reduce regulatory recordkeeping and reporting burden, protect health of workers and the public, minimize mission liability
  - Contribute to mission accomplishment in a sustainable, cost-effective, and environmentally responsible manner.

# Stewardship Goals Build on Long-Standing Programs



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- Pollution Prevention Act of 1990, National policy hierarchy:
  - *prevent* first
  - *recycle*
  - *treat/dispose* last
- Previous *Greening the Government* EOs 13101 and 13148 established Federal leadership role, with pollution prevention goals for waste reduction, recycling, and procurement of environmentally preferable products

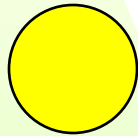
# OMB Environmental Stewardship Scorecard



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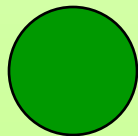


Sustainable Environmental Practices and Goals are a future driver for **Green** performance on the OMB's Environmental Stewardship Scorecard



## Current Status (January 2008)

- EMS Implementation
- Green Purchasing
- Sustainable Design/Green Building
- Electronic Stewardship
- Compliance Management Plan



## Progress (January 2008)

# Environmental Compliance Improvement



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- DOE O 450.1A requires incorporation of environmental compliance management elements in EMS, including:
  - Senior leadership commitment
  - Clear responsibilities and accountability
  - Implementation of environmental compliance audit and review program
  - Checking and follow-up on audit results
    - root-causes of non-compliances tracked and addressed

# DOE Compliance Snapshot 2002–2004



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- **RCRA** (based on 49 permits at 36 sites, over 12 quarters)
  - 12 permits were in violation each quarter, on average (nearly 25%)
  - 6 permits are in 'significant violation' each quarter, on average
  - 44 Notices of Violation were issued over three years
  - 15 fines were issued, totaling over \$10,000,000.00
- **Clean Air Act** (based on 17 DOE 'major' permits, over 12 quarters)
  - 2 'major' permits were in violation, on average, each quarter
  - 8 Notices of Violation were issued (includes 'major' and 'minor' permits)



# DOE Compliance Snapshot 2002–2004 (cont.)



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- **Clean Water Act** (12 'major' and 28 'minor' permits)
  - Every permitted facility was in violation of its permit (i.e. exceeded its permitted discharge levels) at least once during 2002–2004
  - More than half of 'major' permits were in violation each quarter (on average)
  - 1 facility was listed in 'significant noncompliance' each quarter (on average)
  - 14 Notices of Violation were issued during 2002–2004

(data compiled August 2005)

# Notices of Violation and Enforcement Actions



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During the 12-month period ending May 2008, DOE sites:

- Received 35 Notices of Violation for
  - Hazardous Waste (16)
  - Water (11)
  - Air (2)
  - Other (6)
- Were Assessed Fines of \$3,030,537.00

# DOE Sites Listed by EPA in “Significant Non-Compliance”



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- Total of 9 listings, at 7 sites
- Programs
  - EM – 4
  - NNSA – 3
  - NE – 1
  - SC – 1
- Laws
  - Hazardous Waste (RCRA) – 6
  - Water (CWA) – 3
- Current listing available at <http://www.epa.gov/echo>

*(Updated July 24, 2008)*

# Environmental Compliance Management Improvement Audit and Review Program



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- DOE sites required to implement an environmental compliance audit and management review program to:
  - Identify compliance deficiencies and root-causes of non-compliance
  - Ensure audit findings are tracked and addressed
- A DOE workgroup is identifying compliance audit, assessment, and review programs, including contractor assurance systems and oversight programs under DOE Order 226.1A, *“Implementation of Department of Energy Oversight Policy”*
- Guide on Integration of Compliance Self evaluation (O 226.1A) and Compliance Audit (O 450.1A) under workgroup consideration



- DOE has met the initial challenge: EMSs are in place at DOE sites.
- But that's not the end, it's just the beginning.
- EMS, like ISMS, is a process of continual improvement.
- DOE O 450.1A (June 2008) reflects the new requirements for EMSs; deadline for implementation is June 2009
- The Office of Nuclear Safety, Quality Assurance and Environment will continue to support ongoing implementation of EMS at your site.



# **Backup Slides – “Significant Non-Complier” Designations**

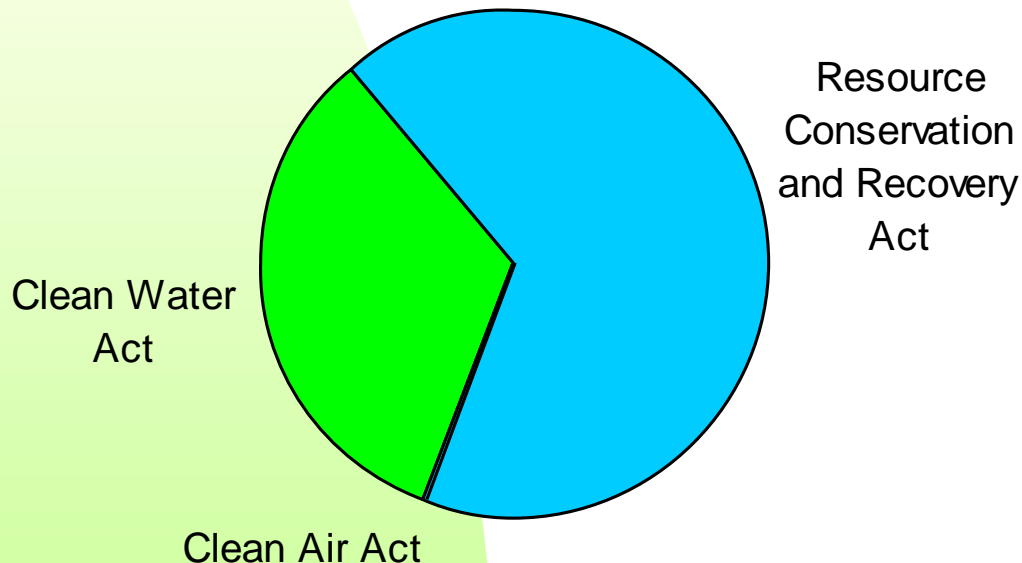
# "Significant Non-Compliers" July 2008



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## "Significant Non-Compliers" July 2008



- WIPP, RCRA
- ORNL, CWA
- Y-12, CWA
- Y-12, RCRA
- ETTP, RCRA
- ETTP, CWA
- INL, RCRA
- Hanford, RCRA
- Los Alamos, RCRA

*Updated August 24, 2008*

# DOE Facilities Currently Listed as “Significant Non-Compliers”



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## “Significant Non-Compliers” (SNC):

- WIPP Isolation Pilot Plant, RCRA
- Argonne National Lab, CWA
- Oak Ridge National Lab, CWA
- Y-12 Plant, CWA/ RCRA
- East Tennessee Technology Park, CWA/RCRA
- Idaho National Laboratory, RCRA
- Hanford Site, RCRA
- Los Alamos National Laboratory, RCRA

## Facilities removed from SNC status since August 2007:

- Sandia National Lab

*Updated July 23, 2008 from EPA’s public website: <http://www.epa-ehco.gov/echo>.*





- **WIPP** was designated SNC in October 2007 for RCRA
  - Permit violations in July 2007
  - Permit violations in February 2007
  - Permit violations in December 2006



- **ORNL** was designated SNC in July 2007 for CWA
  - Total mercury levels significantly exceeded permit limits at discharge point X-12 in the quarters July-Sept 2007, Oct-Dec 2007, and Jan-March 2008



- **Y-12 Plant** was designated SNC in July 2007 for CWA
  - Total residual chlorine levels exceeded permit limits at Outfall C11 from June 2007 through March 2008
  - Non-receipt of Discharge Monitoring Report in the July-September and October-December 2007 quarters.
- **Y-12 Plant** was designated SNC in April 2006 for RCRA
  - Unresolved generator pre-transport issues in November 2007. **Closed January 2008.**
  - Y-12 remains in SNC due to unresolved November 2005 LDR and TSD standard violations. **Closed February 2008.**
  - No ongoing violations are indicated for the most recent quarter (April-June 2008), however **the site is still listed in SNC for RCRA**

# East Tennessee Technology Park



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**ETTP** was designated SNC in October 2007 for CWA

- Non-receipt of Discharge Monitoring Report in the January-March 2008 quarter.
- Non-receipt of Discharge Monitoring Report in the October-December 2007 quarter.

**ETTP** was designated SNC in April 2006 for RCRA

- EPA's database shows violations from a February 2006 state inspection, involving generator requirements and land disposal restriction requirements.

**Issues were closed in April 2008, but SNC listing remains.**



- **INL** was designated SNC in May 2000 for RCRA
  - The EPA database continues to show an unresolved generator issue dating from May 2000



- **Hanford Site** was designated SNC in 1999 for RCRA
  - Violations in March 2007 for tank systems standards remain open.
  - Unresolved issues from January 2007 regarding permit requirements.
  - Unresolved generator violations from September 2006.
  - Unresolved TSD violations from July 2006.
  - Unresolved generator violations from August 2006.
  - Per the State, DOE is not meeting all of its obligations under the Tri-Party Agreement, the Hanford Federal Facility Agreement and Consent Order. The state believes that until all compliance issues are resolved Hanford should still be considered SNC.



- **Los Alamos** was designated SNC in August 1998 for RCRA
  - Unresolved generator pre-transport and permit issues from January 2007.
  - Violations of enforcement agreements are listed for September 2006.
  - According to site staff, the State considers LANL in SNC as a chronic violator due to past compliance history.

# New Auditing Requirements in DOE O 450.1A



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DOE O 450.1A has requirements for two kinds of audits (as specified by EO 13423):

- 1) An EMS audit must be conducted by a qualified outside auditor
  - before declaring the EMS to be “fully implemented,” and
  - at least every three years thereafter;*and*
- 2) Sites must implement an environmental compliance audit and review program.